LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** A method for fabricating a high density ceramic thick film at a thickness of 1 - 200 μm, comprising the steps of:

~~providing vehicle comprising an organic binder and solvent;~~

~~dispersing ceramic powders into the vehicle to be a paste;~~

preparing a paste by mixing a PZT-based ceramic powder with a vehicle comprising an organic binder and a solvent;

forming the paste to thick film by screen printing;

removing the organic binder from the film at 400 - 700°C;

applying ~~sol or sol-like solution to the surface of the film so that the sol or sol-like solution can infiltrate into the film, the sol-like solution being a material that can be processed as a solution by a sol-gel process~~ a PZT-based sol or a solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof, to the surface of the thick film, so as to infiltrate the thick film;

removing ~~the~~ remaining ~~sol or sol-like solution~~ PZT-based sol, or the solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof from the surface of the thick film by spinning ~~the film~~;

drying and preheating the film; and

sintering the film at the range from 700 to 1200 C.

2. **(Canceled)**

3. **(Currently Amended)** The method of claim 1, wherein ~~the sol or sol-like solution are has identical components with the ceramic powder~~ components of the PZT-based ceramic powder in step (1) are the same as components of the PZT-sol, or the solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof in step (4).

4. **(Currently Amended)** The method of claim 1, wherein ~~the sol or sol-like solution are not identical components with the ceramic powder~~ components of the PZT-based ceramic powder in step (1) are different from components of the PZT-sol, or the solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof in step (4).

5. **(Currently Amended)** The method of claim 1, wherein ~~the thick film is densified by forming a thick film with a certain thickness by screen printing, then having the sol and sol-like solution infiltrated into the surface of the thick film and performing the process repeatedly more than twice~~ steps (3) to (5) are performed repeatedly at least twice between steps (5) and (6) to densify the thick film.

6. **(Currently Amended)** The method of claim 1, wherein the sintering is performed at a temperature ~~is~~ of 800 ~~to~~ - 900 C.

7. **(Canceled)**

8. **(Currently Amended)** A method for fabricating a high density ceramic thick film at a thickness of 1 - 200 *μm*, comprising the steps of:

preparing a paste by mixing a PZT-based ceramic powder and a PZT-based sol with a vehicle comprising an organic binder and a solvent;

~~providing vehicle comprising an organic binder and solvent;~~

~~dispersing ceramic powders into the vehicle to be paste;~~

forming the paste to thick film by screen printing;

removing the organic binder from the thick film at 600 - 700°C;

applying ~~sol or sol-like solution~~ a PZT-based sol, or a solution or an alkoxide, hydrate or carbonate of PZT components, or mixtures thereto, to the surface of the thick film so as to infiltrate ~~that the sol or sol-like solution can infiltrate~~ the thick film; and

sintering the thick film at 600 ~~to~~ - 700°C.

9. **(Currently Amended)** The method for fabricating a high density ceramic thick film at a thickness of 1 - 200 μm, comprising the steps of:

preparing a paste by mixing a PZT-based ceramic powder with a vehicle comprising an organic binder and a solvent;

~~providing vehicle comprising an organic binder and solvent;~~

~~dispersing ceramic powders into the vehicle to be paste;~~

forming the paste to thick film by screen printing;

removing the organic binder from the thick film at 400 - 700°C;

applying a PZT-based sol, or a solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof, ~~sol or sol-like solution~~ to the surface of the thick film so ~~that the sol or sol-like solution can infiltrate~~ as to be infiltrated into the thick film;

removing the remaining PZT-based sol, or the solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof ~~sol or sol-like solution~~ from the surface of the thick film by spinning ~~the film~~;

drying and preheating the film at 80 - 600°C;;

sintering the thick film at 700 - 900°C;;

applying a PZT-based sol, or a solution of an alkoxide, hydrate or carbonate of PZT components, or mixtures thereof, ~~sol or sol-like solution~~ to the surface of the thick film ~~again~~ so ~~that the sol or sol-like solution can infiltrate~~ as to infiltrate the thick film; and

sintering the thick film at 600 - 700°C;.